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Dating the Composition of the First Bible? Hebrew Ostraca, Literacy in Israel/Judah, and the Bible

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ABSTRACT: In several articles, a group of scholars (Faigenbaum-Golovin et al. 2016; 2020; 2021; Finkelstein 2016; Shaus et al. 2020) reached conclusions about the number of writers of the Hebrew ostraca from Arad and Samaria. Not content with this result, the group added far-fetched assertions. They claimed that the Arad ostraca show a high degree of literacy in Judah ca. 600 BCE, spreading far beyond "professional" scribes. Only this high degree, they argued, fits major compositions of biblical texts. They insisted that Hebrew scribal activity declined after 586 BCE to such an extent that no major composition of biblical texts was possible in Yehud and Samaria ca. 600-200 BCE. This article criticizes these sensational claims. It does not provide answers for the composition of the Bible.

Key words: Biblical Archaeology, Israel, Judah, literacy, ostraca

1. *Introduction*

In several articles, a group of scholars (Faigenbaum-Golovin et al. 2016; 2020; 2021; Finkelstein 2016; Shaus et al. 2020) studied Hebrew ostraca from Arad and Samaria, reaching reasonable (though not agreed) conclusions about the minimal number of writers of these ostraca.[1] Not content with this result, the group added far-fetched assertions. They argued that the ostraca of Arad show

1. The same scholars share the papers, with occasionally one author added or excluded. The papers are also interconnected by cross references. For example, the group writes: "In our previous studies" [giving references, including to Faigenbaum-Golovin et al. 2016] (Shaus et al. 2020). Or, the group states about the work on the Arad Ostraca: "we worked in two tracks: algorithmic [referring to Faigenbaum-Golovin et al. 2016] and forensic" [referring to Faigenbaum-Golovin et al. 2021: 148] (Faigenbaum-Golovin et. al. 2021: 148). An exception is Na'aman, who appears only on one paper.

a high degree of literacy in Judah ca. 600 BCE, spreading far beyond the circles of "professional" scribes. Only such a high degree, they argued, fits major compositions of biblical texts. They insisted that since the elite of Judah was deported in 586 BCE, there could be no major composition of biblical texts in Persian and Early Hellenistic Yehud and Samaria (ca. 600-200 BCE).

This article criticizes these sensational claims. It does not provide answers for the composition of the Bible.

2. *Writers and Scribes at Arad and Samaria*

Using an algorithm, Faigenbaum-Golovin et al. (2016) identified four writers in the Arad ostraca. This does not mean "hands" in the traditional sense: the results suggest only what ostraca were not written by the same writer. For example, ostracon 1 was not written by the same "hand" as ostraca 24, 31, and 39b (Faigenbaum-Golovin et al. 2016: Table 1). The algorithm cannot identify similarities, that is, ostraca written by the same "hand," and involves a complex "restoration" of letters that simplifies their forms (Faigenbaum-Golovin et al. 2016: Fig. 3). To the four "minimal writers," Faigenbaum-Golovin et al. (2016) added two, based on "textual contexts."[2]

All the writers remain unidentified, though the group suggests that Eliashib, the quartermaster of Arad, wrote ostracon 31 (Faigenbaum-Golovin et al. 2016, 3). Ostracon 31 was perhaps written in Arad and dealt with supplies. This does not prove that the writer was Eliashib: it is just a guess.

Of the six writers, only two are ascribed to ostraca written in Arad (Faigenbaum-Golovin et al. 2016: 3). So, there is no difference from Samaria, where the group identified in later studies two writers.[3]

Faigenbaum-Golovin et al. (2016: 3) claimed that the Arad ostraca could not be written by "professional" scribes, because of:

a) The existence of two writers in "tiny" Arad;[4]
b) Ostraca 1 and 7 order the recipient "to write," while the author of ostracon 40 mentions that he wrote something.

These are not valid arguments. As for argument (a), Arad was not a tiny, but a large fortress in Judean terms. It could have a scribe, who was maybe replaced within the period of the ostraca—hence, two scribes. As for argument (b), letters

2. The "textual contexts" remain vague—being just guesses (see more below).

3. Relatively few ostraca from Samaria could be studied "due to the brevity of the inscriptions". For determining the likely number of writers at Samaria the group created another algorithm, using as a reference their results from Arad, as if they are independent (Faigenbaum-Golovin et al. 2021: 152, 154).

4. Elsewhere, they glorify the Judean army (a "high" literacy rate, a developed "chain of command"); but when the argument requires, they mock it (a "tiny" fortress at Arad).

ordering to write something do not imply that the recipient writes, instead of dictating to a scribe. It would not be mentioned, because it was taken for granted: the presence of scribes did not require constant mention.

The reading "I have written to my lord" (Arad ostracon 40) does not prove that the speaker wrote. He could dictate to a scribe. Worse - the group tells readers that they can find "reconstructions" in the references; but not that the reading "I have written" is a complete reconstruction.[5] They refer to a study by one of the group (Faigenbaum-Golovin et al. 2016: reference 18), without mentioning that he restored there: "I have spoken" (Na'aman 2003: 200).

Later, the group added an analysis of handwriting (called "forensic") by Y. Gerber, which—if credible—renders the algorithms quite redundant, because she identified 12 different "hands" in the Arad ostraca (eight by one ostracon each: 5, 8, 17a, 21, 24, 31, 40, and 111; and four presented as "either" this or that ostracon/ostraca). (Faigenbaum-Golovin et al. 2021; Shaus 2020). However, she did not identify any "hand" responsible for several ostraca, and only a few "pairs" by the same "hand" (ostraca 1+7, 3+16; and 39a-b, two sides of one ostracon).[6]

If we accept the number of 12 writers, does it prove the claims of the group? The answer is no, because only three of these "distinct writers" were associated with ostraca written in Arad (Faigenbaum-Golovin et al. 2021: 154). Three at Arad against two at Samaria - this cannot prove "high" *vs.* "low" rates of literacy, or anything about the composition of biblical texts.

The identification of 12 "hands" raises doubts. Ostraca that are very similar are supposedly written each by a different hand. One would assume that the commander of Arad and his deputy (central positions, communicating with higher authorities and with other places) wrote ostraca (or employed a scribe for that). Yet no ostraca were identified from their "hands." Few ostraca dealing with orders or correspondence remain "free" for them, if we accept the group's assumptions and guesses. The head of the store supposedly writes one letter (identified by guess), but has under him five letter-writing personnel, or more exactly, five one-letter writers (Faigenbaum-Golovin et al. 2021: Fig. 7). Ostraca 3+16 are written by Hananyah. The group identifies him as the manager of a store at Beersheba; but there is no proof of that: it is another guess.

The group (Faigenbaum-Golovin et al. 2016: 3; 2021: 154) repeats the claim that Arad was a "tiny" fortress of only 20-30 personnel.[7] They do not

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5. From the supposed "I have written" (line 5), "only the final letter [y] remains; the rest could be anything" (Dobbs-Alsopp 2005: 72). For example, "I have said" or "I have given."

6. In handwriting analysis, one seeks to authenticate a "hand." Written items from a crime scene would be compared to other writings of suspects. While differences may indicate lack of fit, the search is for similarities. One wishes to find the few who performed the crime, not the millions who did not.

7. This estimation is based on "broadly-accepted paleo-demographic coefficients" (Shaus et al. 2020: abstract); but these were deduced from villages, not fortresses. Zeev Herzog, one of the Arad excavators, estimates that ca. 50 people lived there (personal communication).

notice that this contradicts their identification of many "hands" and restoration of the chain of command at Arad (Faigenbaum-Golovin et al. 2021: Fig. 7). Can a "tiny" fortress with 20-30 people have such a large store that requires a quartermaster, a vice quartermaster, and four subordinate, letter-writing personnel? It leaves no room for "simple," manual store workers (whose numbers were surely higher than that of managers). Or, are we expected to believe that all those living in Arad were literate?

3. *What Biblical Composition is dated by the Arad Ostraca?*

The group did not specify what biblical composition (or compositions) they managed to date thanks to their analysis of the Arad Ostraca. In the title of the 2016 paper (Faigenbaum-Golovin et al. 2016), they say "composition of biblical texts." This may denote the entire Bible, one book, or one chapter. In the abstract, they give the even broader "composition of literary texts."

In the text, they speak about "the first major phase of compilation of biblical texts in Jerusalem" (Faigenbaum-Golovin et al. 2016: 1). By adding "in Jerusalem" they beg the question, because these words rule out the possibility of a first, major compilation in Northern Israel, or any composition outside Jerusalem. They give one reference—to Schmid's (2012) *Literary History of the Old Testament*.

Schmid reconstructed "the basic lines of an Old Testament literary history" thus:

> This includes, within the Pentateuch, the delimitation and ordering of the Priestly writing; with some reservations, also the literary-historical core of Deuteronomy; among the former prophets, the identification, and recently also the redaction-critical distinction, of the "Deuteronomistic" interpretive perspectives; among the Prophets, the distinction between First and Second Isaiah as well as the acknowledgment of the long-drawn-out history of the redaction of the prophetic book; likewise, in the Psalms and Wisdom literature […] to distinguish, for example, positions from the monarchical and post-monarchical periods (Schmid 2012: xiii).

Is only one of the basic lines "major," and which is "the first"? Schmid warns that "on the whole, more remains disputed than undisputed," and emphasizes that "many Old Testament texts and writings possess both an oral and a written prehistory as well as a post-history even within the Old Testament itself." Hence, discussing them in the context of one period does not mean that they were not written in some form earlier, or altered later (Schmid 2012: xiii-xiv).

Schmid (2012: 49-63) dates the first compositions to the 8th century BCE, both in Jerusalem and in Samaria (including the beginning of the Jacob traditions that is, Genesis 25-35; certain Psalms like 29 and 68; the speech of Solomon in 1 Kings 12-13; independent stories about Saul and David, and some

wisdom literature, anal narratives and lists like Joshua 18-19, which we cannot restore). He locates several compositions in the Assyrian period: parts of Isaiah 1-39, stories on individual patriarchs in the Pentateuch, the first legal texts (the Book of the Covenant, which Deuteronomy later reinterprets), and early stages of Prophetic literature (Hosea, Amos, etc.). Which of these is "first," and is only one "major"? Schmid dates the beginning of the "Deuteronomistic" books of Kings to Josiah (it could not be the "first"). This is a hotly debated subject.[8]

Faigenbaum-Golovin et al. (2016: 1) also speak about a "stage setting for compilation of literary texts in monarchic Judah." Why "monarchic Judah," we understand (in order to beg the question). But what "stage setting" is required in order to compose a literary text?[9] They never ponder about it, and towards the end of the paper write:

> Widespread literacy offers a better background for the composition of ambitious works such as the Book of Deuteronomy and the history of Ancient Israel in the Books of Joshua to Kings (known as the Deuteronomistic History), which formed the platform for Judahite ideology and theology (Faigenbaum-Golovin et al. 2016: 4).

Are other parts of the Bible not ambitious? The words "such as" leave an open door, but there is no serious contemplation here. How could Deuteronomy and "Joshua to Kings" be "the platform for Judahite ideology and theology"? Every kingdom requires an ideology, for example, to legitimize the rule of its kings (and queens). Judah existed as a Kingdom from the 10th or 9th centuries BCE, while the texts "Deuteronomy" and "Joshua to Kings" were written at a much later date, or even after Judah no longer existed as a kingdom. They could not form a "platform" for the ideology/theology of Judah. The ideology/theology of biblical books is not identical to the ideology/theology of Iron Age Judah: this simplistic equation is a methodological error.[10]

There are heated debates about the "oldest" Deuteronomy (*Urdeuteronomium*). While many scholars date it to the late 7th century BCE (Josiah's "reform"), some think it originated earlier, in North Israel (but see Edenburg and Müller 2015). Others date it to after 586 BCE (Pakkala 2009). The oldest *Urdeuteronomium* was not composed together with the Deuteronomistic Joshua-Kings (it is not certain that there was a coherent "Deuteronomistic

8. Schmid belongs in the German tradition, which differs significantly from other "branches" (Lemche 2012; Mayfield 2013). Even within the German tradition, there are many different voices. For a relevant collection of studies that reflects mainly American scholars, see Schmidt (2015).

9. This term reflects a common trend of former biblical/biblical archaeology studies: to find a "life setting" (*Sitz im Leben*) for the text that reflects a historical/archaeological reality (Edenburg and Müller 2015: 161).

10. To give one example, the theology of the "Deuteronomistic History" stresses that the Jerusalem Temple is the only legitimate cult place of Yahweh. Yet, in the Iron Age various other cult places were legitimate in Judah/Israel (and even after the Iron Age: Granerød 2016; Hensel 2018; 2024; Kratz and Schipper 2022).

history," or that it included Samuel (Edenburg and Pakkala 2013). All these biblical books were created by many "hands" over a long period. The citation about "a better background" (above) does not refer to any concrete composition, but to a wider range that does not belong to the same time.

The group who wrote these studies does not seem to be able to define the "first," "major" composition, which (they claim) can be dated by the Arad ostraca. They ask us for a blank check: to believe that the Arad ostraca can "date" the first major Bible, without specifying what this first Bible is. And, in order to "prove" that the "first," "major" biblical composition fits only the Arad ostraca, they begged the question by adding "in Jerusalem"/"in monarchic Judah".

It also seems that the group's "biblical conclusions" are determined in advance. The group knows (or thinks it knows) what biblical compositions date to what period (referring to Schmid without reading him attentively, or following their own member, Finkelstein 2016). Then, they "prove" this by a "scientific archaeology" of ostraca (a mixture of sophisticated algorithms and crude guesses).[11] Finally, they intimate that only *their* work is valid for dating the Bible, the way to future research—not the work of biblical scholars.

4. *Was the Bible Composed by the Military?*

Faigenbaum-Golovin et al. interpret the Arad Ostraca as evidence of a "proliferation of literacy among the Judahite army ranks ca. 600 BCE" and of "a high degree of literacy in the entire Judahite chain of command" (Faigenbaum-Golovin et al. 2016: 3).

However, the Arad Ostraca do not give sufficient data to restore the chain of command of the army of Judah. The entire restoration (Fig. 4, orange and green) is based on two ostraca (nos. 24, 40) involving guesses, while the "logistical chain" (Fig. 4, blue) is an artificial separation.

In a label, Faigenbaum-Golovin et al. (2016: Fig. 4) place anonymous "Kittiyim officers" at the same level as the commander of Arad, and as the authors of Ostraca 1, 2, 5, 7, 8, and 17a.[12] Is it a mistake (unnoticed by the nine authors)? In the text, a note states: "we conjecture that the status of the officers who commanded the supplies to the Kittiyim […], who wrote ostraca 1-8 and 17a, was similar to that of Milkiyahu" (note ‡). Nothing suggests that such officers were "Kittiyim officers." So apparently, it is just sloppy writing. To the core of the matter:

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11. The group also ignores the basics of archaeology. Relatively many ostraca come from the destruction layers of the end of Judah. They, including the Arad ostraca, are "late biased," because they reflect the end of layers, not their entire duration. Perhaps as many ostraca were written in Judah in the early/middle seventh century BCE, but did not survive. Therefore, one cannot limit the horizon to just "ca. 600 BCE."

12. The Kittiyim were Greek or Cypriot mercenaries that served in the army of Judah, probably in small numbers.

a) The supplies to the Kittiyim were typically modest: a few *baths* (c. 19.2 liters) of wine, sometimes one vessel with oil and as a bonus, a little vinegar. Bread/dough/flour is also given, but the amounts cannot be precisely determined.[13] The modest scale indicates small units, whose commanders or "liaison officers" could not be equal in rank to the commander of Arad.
b) Ostraca 1, 2, 4, 5, 7, 8, and 17 (reverse) mention the Kittiyim units as the intended *recipients* of the supplies. In any army, orders for deliveries of supplies come from outside the units that are to receive them. Military units can plead or ask, but do not order delivery of supplies to themselves. So, the writers of these ostraca were not from the Kittiyim units, or liaison officers accompanying them, but Judean officers on a higher level, and certainly not "Kittiyim officers."[14] No scholar disputes the appreciation that higher-level military officers in Judah—part of the elite—could be literate, at least to some degree. But also, nothing proves that these ostraca were not written by scribes working under such officers.

Faigenbaum-Golovin et al. (2016: 3, last note) refer to Rollston (2010) in support of the claim about "the literacy of army personnel." But he gives no such support. Rollston concludes that the Hebrew ostraca (including from Arad) were written not by army personnel but by scribes, possibly commissioned as military scribes:

> The scribes of all of these corpora [Lachish, Arad and Samaria] wrote in elegant hands even though the medium was a potsherd and these texts were to serve an ephemeral administrative function. […] Most of the extant Old Hebrew inscriptions are the product of trained scribal professionals and this is definitely the case for these major corpora (Rollston 2010: 129).

While a few Old Hebrew inscriptions reflect "the hand of a beginner," the great majority "are written in a trained and refined hand" of scribes (Rollston 2010: 120—this does not conform to the conclusions of the group). Scribes were trained in family contexts (Rollston 2010: 123). We add the observation that

13. In one case a larger amount of 300 bread—likely *pittas*; but part of it could be a delivery, which the Kittiyim were to carry rather than consume.

14. In later studies, four different "Kittiyim officers" are labelled in a figure as writers of ostraca 1, 2, 5, 7, and 8. But the text says that they are Judean commanders or liaison officers of Kittiyim units: "thus, it is conceivable that leading the *Kittiyim* into desert reconnaissance missions was the responsibility of at least four literate Judahite military officers" (Faigenbaum-Golovin et al. 2021: 153, Fig. 7). Regardless, the group stated that the entire "chain of command" of Judah's army was literate. So, if Kittiyim officers (real Kittiyim, not sloppy-label-"Kittiyim") were part of that chain, they must have been bilingual and wrote Hebrew letters. The onus remains on the group to find such letters from Kittiyim officers.

family contexts were not open to outsiders. Rollston (2010: 129) concludes that some royal/temple officials were literate, including army officers, but not of low ranks.

It is extremely unlikely that the army of Judah was literate to any "high" degree, when we recall that education of soldiers is a very recent phenomenon, driven by a rapid advancement in technology of weapons in the 19th century CE. In the British army around 1800-1850, probably only a third of the soldiers were literate to any degree. By 1858, 20.5% of the soldiers were still illiterate and a further 18.8% could read, but not write (Hadaway 2001).[15] In the 1860s, literacy among the rural population of Russia was ca. 6%; by 1874, 21% of those recruited to the army were literate—to some degree. "Illiteracy in Russia, as elsewhere in the world, was most prevalent among the peasants" (Brooks 1985: 4). In 1931 Palestine, among the largely rural Muslim population aged five years or more, 79.7% of the men and 96.8% of the women were illiterate (Mills 1931: 208).

We know little about the identity of the authors of the Bible, but all the indications point out that they did not come from the military.[16] Some biblical authors were perhaps royal scribes and officials with knowledge of laws, treaties and chronicles. Others likely had a religious background as scribes and priests. The Books of Kings imply that the authors had access to royal chronicles, whether as "sources" or "drafts" (e.g., Na'aman 2005; Auld 2021). Authors of texts in the Pentateuch knew—and understood—legal literature. Chapters of Deuteronomy (13,28) show knowledge of Akkadian vassal treaties (Edenburg and Müller 2019; Pakkala 2019).

The biblical books are rarely interested in the administration and supply of the army. The Kings (and few Queens) in the so-called "Deuteronomistic History" are judged not by military achievements, but for doing right or wrong in the eyes of God (as interpreted by the writers, who situate themselves as the legitimate bearers of the Yahwistic faith). Most of the rulers of Judah are negatively judged (Ben Zvi 2011; Müller 2015). This could not be the world-view of the army of Judah: soldiers of this army were not in a position to judge Royals. The negative evaluation likely dates after 586 BCE, when there were no longer Kings and Queens in Judah.

The degree of literacy in the Judean army does not represent literacy in Judah in general, or—more importantly—among the elite. According to Faigenbaum-Golovin et al. (2016), the Arad Ostraca were not written by scribes. But if they read Schmid, they would have noticed his conclusion that the Bible was written "by scribes for scribes," because of the high degree of intertextuality within it (Schmid 2012: 38). Rollston (2010: 133) calls it "a

15. Until the middle of the 19th century CE, nobody considered that soldiers need to be literate. Hence, there are no surveys or statistics on degree of literacy of soldiers before that time.

16. They were men of letters, not of actions (some men belong to both categories, but they are rare). We speak about men here, because in Iron Age Judah scribes and military officers were male professions.

corpus written by elites to elites." Young (1988) shows that those referred to in the Bible as literate are almost always scribes, royal officials, priests, kings, and prophets. Therefore, when the group writes:

> The high literacy rate detected within the small Arad stronghold, estimated (using broadly-accepted paleo-demographic coefficients) to have accommodated 20-30 soldiers, demonstrates widespread literacy in the late 7th century BCE Judahite military and administration apparatuses, with the ability to compose biblical texts during this period a possible by-product (Shaus et al. 2020: abstract).

It is not logical. The group can compose complicated algorithms, but is unable to do a simple mathematical calculation: if there were 30 soldiers at Arad, but only three of them were "writers" (Faigenbaum-Golovin et al. 2021: 154), it means a literacy rate of only 10%. So where is the proof for a "high" rate of literacy? As for the "ability to compose biblical texts," the Bible was not composed by quartermasters as a by-product to their military duties. The army of Judah did *not* compose the Bible, and the degree of literacy of this army or of its officers is irrelevant for the composition of biblical texts.

5. *A Biblical Literacy of Ostraca?*

Faigenbaum-Golovin et al. (2016: 4) write that "a significant number of literate individuals can be assumed to have lived in Judah ca. 600 BCE", and that "widespread literacy offers a better background for the composition of ambitious works such as the Book of Deuteronomy."

Additionally, they cite the complaint letter of a worker from Meẓad Hashavyahu as "supporting writing awareness by the lowest echelons of society" (2016: 3). Though, they admit that "most scholars agree that it was composed with the aid of a scribe." Indeed (Rollston 2010: 130), and if so, this letter proves nothing about literacy among "the lowest echelons of society." Notice the cunning shift to "writing awareness," when the issue should be literacy, i.e., knowledge of reading/writing. Scribes, scrolls, ostraca (etc.) were not confidential military secrets. Over a lifetime, illiterate persons would have been exposed to writing/reading, but *the percentage of people who were aware of reading/writing by other people is not a degree of literacy*.

The presentation of a "high" degree of literacy in Judah c. 600 BCE (=Arad ostraca) *versus* a "restricted" or low degree in 8th-century BCE Israel (=Samaria ostraca) is not a credible argument, but a literary fiction:

1. The two collections of ostraca (Samaria and Arad) differ, and cannot be compared as if they are similar. The ostraca found in Samaria in 1910 are all very short "labels," registering deliveries of oil and wine jars (mostly single jars) to the royal court. They cover a few years (years 9-10 and 15 of one/two monarch/s) (Na'aman 2019) and only the vicinity of Samaria. If handled by one

store at Samaria, there is no wonder that only one-two scribes were involved.[17] The Arad ostraca are much longer and more varied than the Samaria "labels." They include orders about supplies (wine, oil, bread, flour, dough, vinegar, and silver) and units; lists of names with/without quantities; matters related to the Arad temple; and "news" from outside Arad. They include ostraca written outside Arad. Therefore, it is only natural that more "hands" were involved in their writing than with the Samaria ostraca.

2. Ink-written ostraca survive better in dry areas. More ostraca are found in recent excavations that are slower, use sifting and excavate dumps (Bagnall 2011). In the Negev of Judah, which prospered in the 7th century BCE, relatively many ostraca have been found (dry area, "modern" excavations), as opposed to the Samaria hills.

3. Faigenbaum-Golovin et al. (2016; 2021) hardly consider writing on papyri. When they do, they spin the matter:

> During the days of Joash or the first years of Jeroboam II, Hebrew writing [in Northern Israel] had already been sufficiently developed to enable recording on ostraca; later, during the peak prosperity of the kingdom, the system could have changed to a more efficient recording system, perhaps using papyri (Faigenbaum-Golovin et al. 2021: 155).

Writing of ostraca was not contradictory, but complementary to writing of papyri. Ostraca were overwhelmingly used for "everyday writing," while literary texts were written on papyri: "by comparison with most ostraca, however, the papyri are in many cases almost like narrative histories" (Bagnall 2011: 136). Papyri from (any phase of) Iron Age Northern Israel and Judah are extremely rare, because they did not survive, not because they were not used. To demand "evidence" for an early use of papyri and then invent, without evidence, that writing on papyri started later than on ostraca (Finkelstein 2016: 6) is a populist spin.[18]

4. What do these scholars mean when they posit a "high" degree of literacy as a requirement for composition of biblical texts? How high? Is it 80% of the population, 60%, or 30%? Nobody can define literacy in Iron Age Israel/Judah quantitatively. Instead of admitting this, the group (Faigenbaum-Golovin et al. 2016; 2020; 2021; Shaus 2021) draws a misleading picture of seemingly two simple measures, "low" and "high" (or "restricted" and "widespread"), and argues that only the "high" degree fits major compositions of biblical texts. But they never define what this "high" degree means.

If they read Schmid at all, they missed a crucial point:

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17. Other ostraca, of more varied nature, were found in Samaria in 1931-35; but they number only seven.

18. *Bullae* from 8th century BCE Jerusalem with imprint of papyri sheets show the use of papyrus (which was too expensive for wrapping material) (Reich et al. 2007: 156, Fig. 3).

> The texts [of the OT] were produced and received within a comparatively narrow circle that was adequately familiar with reading and writing and existed within a largely illiterate society. […] [However,] *there is no precise boundary between literacy and illiteracy; the mastery of reading and writing was, then as now, a gradual process.* A little note attesting to the delivery of goods like those appearing, for example, in the Samarian ostraca could undoubtedly be deciphered by a broader circle than the Siloam inscription or a prophetic book (Schmid 2012: 35-36; emphasis added).

Some people could read/write short ostraca, but were not fully literate.[19] Even today, it takes years to teach children to read and write: it is a gradual, long process. Ostraca in general are small and their inscriptions are brief and not intended for long-term holding. They predominantly record "everyday writing"—receipts, accounts, orders, and lists. Letters account for less than 10% of ostraca (Bagnall 2011: 132). *The ability to write an ostracon does not imply the ability to compose a biblical text*.[20] Therefore, the numbers of writers of simple ostraca in Arad and Samaria is meaningless for dating "major" (or any) biblical texts.

6. *No Biblical Compositions for 400 years?*

Many biblical scholars assume significant composition of biblical texts in Yehud after 586 BCE. Faigenbaum-Golovin et al. (2016) argue that this is impossible. They claim that the "disappearance" of Hebrew inscriptions ca. 600-200 BCE implies lack/scarcity of literati and inability to compose "major" biblical texts:

> In fact, not a single securely dated Hebrew inscription has been found in this territory [= Jerusalem and the southern highlands] for the period between 586 and ca. 350 BCE—not an ostracon or a seal, a seal impression, or a bulla (the little that we know of this period is in

19. Apparently, the group has not read Rollston either. Rollston (2010: 127) defines three levels: illiterate (including those who could just scrawl their name), literate (fully able to read/write) and semi-literate ("capable of reading the most remedial of texts with at least some modest level of comprehension and often the ability to pen some of the most common and simplest of words"). Even today, some fields of literacy are closed to "common" persons. Laws are closed books, and the language of Economy is challenging. Therefore, we employ lawyers and accountants. How many readers of this article can understand academic papers in, say, physics or chemistry (excluding the few who happen to hold degrees in those fields)?

20. Scrolls were not reader-friendly manuscripts. Almost always, when the Bible describes texts being read, the person who reads had already heard the text before. Biblical texts were performed orally by scribes (Miller 2023: 328-329). There is nothing new in the opinion that growth in numbers of inscriptions in 7th-century BCE Judah reflects growth in literacy; but see Rollston (2010: 133).

> Aramaic, the script of the newly present Persian empire). This should come as no surprise, because the destruction of Judah brought about the collapse of the kingdom's bureaucracy and deportation of many of the literati (Faigenbaum-Golovin et al. 2016: 4).
>
> Judging from archaeological data, the destruction of Jerusalem by Nebuchadnezzar in 586 BCE brought about decline if not cessation of this significant Hebrew literary activity for the next four centuries (Faigenbaum-Golovin et al. 2021: 155, referring to Finkelstein 2016).
>
> I refer to the disappearance of Hebrew writing from the archaeological record […] not a single securely-dated inscription has been found for the period between 586 and *c.* 350 BCE: not an ostracon, nor a seal, not a seal impression, nor a bulla. […] scribal activity declined—and significantly so (Finkelstein 2016: 9-10).[21]

This line of reasoning must be rejected:

1. An argument based on negative evidence (lack of inscriptions) is indecisive.
2. Not just Hebrew inscriptions are scarce. For example, there are almost no weights or figurines from Yehud (for figurines see de Hulster 2017; however, the few found are not Persian period type figurines, but fragments of Iron Age figurines in secondary contexts). While figurines could be avoided for some reason, there was no way to avoid weights in this period, e.g., in order to weigh coins (and there are mentions of weight measures in written sources). Hence, at least part of the scarcity of inscriptions derives from the limited remains and lack of destructions in the Persian period.
3. Faigenbaum-Golovin et al. (2016: 3; 2021: 154) claimed that Hebrew literacy was widespread in Judah c. 600 BCE, reaching the "lowest echelons of society"; even "humble vice-quartermasters of small, peri-

21. Finkelstein (2016: 3) declared that "archaeology can even help in identifying different layers of [biblical] authorship," and suggested that "the future of research into the evolution of biblical texts be in collaboration between specialists in text analysis and archaeology". Lest anyone misunderstands who belongs to the future, in his typical modesty, Finkelstein added a reference (*ibid*, n. 3) to three studies authored by himself (in the first place) and Römer (second). He gave a "humble" advice to biblical scholars "who tend to place much biblical material on Persian period Yehud": they should instead "try to date as much material as possible to periods in Judah/Judea that demonstrate widespread scribal activity and literacy […] that is, the latest phase of the Iron Age and Late Hellenistic period after c. 200 BCE" (Finkelstein 2016: 14). He urged them "not to ignore the archaeological evidence – despite the fact that at times it is mainly negative" (Finkelstein 2016: 15). He means, of course, the archaeological evidence that he produces (or more precisely, the latest layer of it, before he finds a more fashionable idea; see Kletter 2024). He ends his article by describing his own work as something that "threatens to shatter" other theories, and calling theories by others "slick, fad-driven theories" (Finkelstein 2016: 15).

pheral desert outposts" were literate. If so, a deportation of elites after 586 BCE could not cause the disappearance of Hebrew literacy. They contradict themselves.

4. Was the entire elite of Judah deported by the Babylonians? "The "vinedressers and ploughmen" who remained in the land were hardly capable of producing written documents", writes Finkelstein (2016: 14). This is based on the Bible, not on archaeology.[22] It is part of the biblical picture that presents those who have returned from Babylonia as far superior to those who have remained. It is not necessarily historical; but if one accepts the biblical picture, there has been an elite of returnees in Jerusalem since 538 BCE.
5. There are quite many Aramaic inscriptions from the Persian-Hellenistic periods. Hebrew was no longer used for "everyday" inscriptions, so ostraca and seals were not written in Hebrew. The Bible, however, is not an "everyday" inscription.[23]
6. The group insists on considerable composition of biblical texts after 200 BCE, based on a "reemergence" of literacy (Faigenbaum-Golovin 2016: 1, box), or a "revival of Hebrew" (Finkelstein 2016: 14-15).

   Those who see a "revival of Hebrew" explain it mainly as due to religious, ideological, and/or "national" sentiments or policies. The "burst" of Hebrew texts in Qumran is religious and sectarian,[24] while some coins and Yehud stamps project Hebrew as a symbol of rule. There is no "Hebrew revival" in terms of *everyday epigraphic finds*. Except for some Hebrew documents from the two Jewish Revolts against Rome (66-70 and 132-135 CE) (Cotton 1999; Eshel 2006), the vast majority of everyday epigraphic materials throughout the Persian, Hellenistic, and Roman period is Aramaic:

   > The epigraphic evidence from ancient Palestine indicates that Aramaic was used widely in a variety of *non-literary contexts* throughout the Second Temple period. Hebrew documents and inscriptions are

22. The land was not empty, even if there was a marked decline. See Barstad 1996; Lipschits 2005, 119; Ben Zvi 2010; Kim 2020.

23. Again, the group apparently did not read Schmid (2012, 36–7): "The opposite conclusion, that the lack of *Hebrew* inscriptions in the Persian period should cause us to think that the Old Testament was essentially created in the pre-exilic period, […] has all the historical probabilities against it. Of course the inscriptions of the Persian period were composed in the *lingua franca* of the time, namely Aramaic […] The statistical findings must be interpreted with caution since most of the written texts from this period were inscribed on materials that have not survived the intervening centuries (papyrus in particular), and the surviving inscriptions, especially the ostraca, only fragmentarily reflect the writing culture."

24. Compare the five Hebrew inscriptions, as against 400 Aramaic inscriptions, from Mt. Gerizim, "written for a public purpose in the priestly context of the sanctuary" (Dušek 2017, 143).

> relatively rare by comparison (Machiela and Jones 2021: 250-251; emphasis added).
>
> Aramaic remained the primary language for writing documents in Palestine throughout the Persian, Hellenistic, and Roman periods, even in Samaria and Judah (Machiela and Jones 2021: 256; cf. Dušek 2017: 145-146).
>
> Even during the two Jewish revolts [against Rome], Hebrew never replaced Aramaic as the primary language for writing economic, administrative, and legal documents (Machiela and Jones 2021: 261).
>
> If biblical scribal activity was dependent on everyday epigraphic finds in Hebrew, such as ostraca and seals, there could be no such activity even after 200 BCE.

7. *Argumentum ad absurdum*—following the arguments of the group leads to absurdity. Finkelstein (2016: 14-15) advises us "to place the compilation of as much [biblical] material as possible in Babylonia" ca. 600-200 BCE. Can he give references to Hebrew ostraca, seals, seal impressions and *bullae* of this period from Babylonia? If Hebrew literacy could not thrive without ostraca, seals, seal impressions and *bullae* in Yehud and Samaria, how could it do so without them in Babylonia?

7. *How many Literati Are Needed to Compose a Biblical Text?*

In the following lines we use "scribes" for the sake of convenience, to avoid disagreements about authors, redactors, editors, etc.

Biblical scribes did not work in a conference mode, that is, in large groups discussing and then writing an agreed text. At any given moment during the composition of the Bible, a text was composed/revised by one scribe. That scribe could, of course, consult with other scribes and other texts, but the writing of a text in an age before presses was individual (a few scribes could cooperate, each writing for example a certain part of a scroll; but the writing of each part was basically individual).[25]

While the Bible accumulated gradually through the work of many scribes over hundreds of years, *at any given moment the composition of a biblical text required only one scribe.* Whether the Samaria/Arad ostraca were written by five or fifty "non-scribes" is meaningless for the composition of biblical texts. Fifty writers from the fabulous "chain of command" of the Judean army, or

25. Legends about the 70 or 72 translators of the Bible to Greek claim that each worked secluded (reaching in a miraculous way the same translation). The Letter of Aristeas tells another story: each worked in seclusion and later they sat together and reached an agreed translation, which was recorded by one official, Demetrius. So again, the actual writing was individual. Notice Schmid (2012: 37): the books of the OT were composed as "separate and unique pieces", and there were, as yet, not many copies.

hundreds of persons from the wonderfully "high" degree of literacy in Judah c. 600 BCE were *not* required in order to write a biblical text.

The requirement was one writer - but this writer had to be a trained scribe immersed in (religious/legal/historiosophical) literature.

8. *Iron Age Literary Texts*

A much better criterion than ostraca for the ability to compose literary texts—including biblical texts—is actual literary inscriptions. While they are few and mostly short, their nature exhibits the ability to write literature. I focus on the Iron Age and cut references to a minimum (dates are approximate; compare also Schmidt 2015: 103-132; and Eames and Garfinkel 2024):

1. The Mesha Stele, Moab, 9th century BCE (Ahituv 2008: 389-419). A text about the victories and building projects of King Mesha. It is not from Israel/Judah or in Hebrew, but since Mesha was a vassal of Israel, it implies a similar ability to write such texts also in Israel.
2. Tell Deir 'Alla, the Bala'am plaster texts, first half of the 8th century BCE (Ahituv 2008: 433-65). The two "compositions" are quite long and literary. They deal with the seer Balaam son of Beor, known from the Bible (without textual dependency). The script is Aramaic and the language is perhaps "local." It shows that literary, biblical-like compositions were written in this time even in a "provincial" area.
3. Kuntillet 'Ajrud (belonging to Northern Israel), middle 8th century BCE, blessings and especially plaster inscriptions. Lines 2-3 of inscription 4.2 "describe the revelation of YHWH in a language similar to that of various biblical texts" (Na'aman 2013a: 309). Inscription 4.3, is "possibly an early version of the Exodus story […] [only] the text is too fragmentary to verify this conjecture" (Na'aman 2013a: 312). These texts warn us against reliance on negative evidence:

   > The assemblage of inscriptions unearthed at Kuntillet 'Ajrud presents, for the first time, the wealth of inscriptions written in the Kingdom of Israel at its peak, in the era of Jeroboam II. Similar inscriptions have not been discovered to date in the Kingdom of Israel and Judah - a fact that might hint at the limitation of archaeological research and demonstrate the need to avoid conclusions on the basis of negative evidence (Na'aman 2013b: 51).

4. The Siloam Inscription (the reign of Hezekiah or slightly later). A quite long inscription, celebrating tunneling for a water system. "The style of the inscription, biblical and literary, looks as if excerpted from a chapter in one of the biblical historiographical sources" (Ahituv 2008: 22; add an inscription from the Ophel, Ahituv 2008: 30-32).

5. Few of the Lachish ostraca (esp. nos. 3-6) that indicate frequent exchanges of letters and are literary (Ahituv 2008: 56-83); perhaps also Arad ostracon 40 (Ahituv 2008: 142-144) and an ostracon from Kh. Uzza (Ahituv 2008: 173-177).
6. The Ketef Hinom amulets (from a tomb of the late Iron and Persian periods)—two "biblical" blessing texts, comparable to Num 6,24-26 (Ahituv 2008: 49-55).

Based on these texts, the Israelites/Judeans could compose literary texts from the 9-8th century BCE at the latest.[26]

9. *Trauma and Writing*

I concur with the view that the fall of Judah and the destruction of the Temple (586 BCE) was a trauma for the society and for the literati. Therefore, a large "boost" for composing the Bible likely happened after, not before, 586 BCE, as a creative healing from and theological reflection on the trauma. The literati did not wait 400 years before responding to the trauma.[27]

How many *literati* are needed to write a literary text after or in the midst of trauma? We can benefit from comparison to the darkest chapter in history. It took only one writer to write a history of the Vilnius Ghetto. The last entries in Herman Kruk's diary read:

> September 8 [1944]. On Wednesday the 6th, the inmate Yofe was shot on the railroad. He got a bullet for leaving his work post, and fell on the spot. […] Thursday, right in the morning. Yofe was buried in the forest, where the shooting took place […]. Where seven Jews are buried. […]. [I] Went out of the camp to wash myself. At the well, there is a bench for Estonian forced laborers. When they saw Häftlinge Juden [Jewish Prisoners], they showered us with bread, cigarettes, etc.
> September 17. Today, the Eve of *Rosh Hashanah* [holiday], a year after we arrived in Estonia (by the Jewish calendar), I bury the manuscripts in Lagedi, in a barrack of Mrs. Shulma, right across from the guards' house. Six persons are present at the burial (Kruk 2002: 702-704).

The next day, Lagedi was liquidated and 420 Jews, including Kruk, were murdered in a nearby forest. Due to a mechanical failure, the last two trucks

26. The group knows it ("complex literary works appear for the first time in Israel in the early eighth century"—Finkelstein 2016: 6), but to make noise, "forgets" it in the papers about the Arad ostraca. See also Rollston (2010: 134-135), based on characteristics of the Hebrew script (I do not endorse his use of "nation;" Kletter 2004). For an updated discussion of literacy in Israel and Judah, see now Richelle 2024.

27. Consider, for example, the book of Lamentations, which refers to the fall of Jerusalem in 587 BCE, and is dated by most scholars to a period after that fall (Frevel 2017; Middlemans 2021: 3, 56-57).

carrying some 80 men and women were delayed. They heard the drivers being told: "you came too late, we are finished for today." The trucks drove to the Tallinn prison, and next day to the Klooga camp. That day, the camp was liquidated: ca. 2,000 were murdered and 108 survived. One of the six who knew about the manuscripts survived and retrieved them after the war (Kruk 2002; Anolik 1990; 2022; Birn 2009; Dror 1997; Eichic 2006; Maripuu 2006; Weiss-Wendt 2009; https://kogumelugu.ee/et/videoteek/theodore-balberyszski).[28]

Texts have been written by single authors under difficult conditions. The material requirements are few (cf. Rollston 2010: 112), and the crucial necessity is the will to write, related to a belief in, or respect for, the written word.

10. *The Literary History of a Text*

The literary history of the text of Faigenbaum-Golovin et al. (2016) should also be of interest. The lack of manuscripts is a handicap for determining the real contribution of each "hand." But one can compare this text with earlier and later, related texts (articles, "breaking news," etc.). The role of the writers is presented in one text thus:

> Shira Faigenbaum-Golovin, Arie Shaus, and Barak Sober carried out the algorithmic work and are first co-authors in this article. Yana Gerber conducted the forensic examination of the Arad ostraca. Eli Turkel supervised the algorithmic work. Eli Piasetzky and Israel Finkelstein directed the project (Faigenbaum-Golovin et al. 2021; compare with Shaus et al. 2020: 1).

We propose that the literary history of the text of Faigenbaum-Golovin at al. (2016) included two major stages. In the first stage, writers from relatively lower echelons of the academic chain of command developed an algorithm for the Arad ostraca, guided by Eli Turkel.[29] They wrote most of the sections titled

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28. Documenting the Lodz Ghetto was the initiative of one person, Emanuel Ringleblum, who organized a group to collect materials (and wrote much of the Ghetto history himself). Ringelblum and his family were murdered, but parts of the archive were found in the ruins of Warsaw after the war (Ringelblum 1958; Gutman 1989; Kassow 2007; https://archives.jdc.org/exhibits/in-memoriam/emanuel-ringelblum/). Compare the extraordinary survival of Victor Klemperer and his diaries—making him, posthumously, "part not only of German but of European and World literature" (Chalmers, in Klemperer 1998: xxi).

29. Compare Finkelstein (2016: 6): "the mathematicians on the team developed a method which has recently helped to check the number of (writing) "hands" in the Arad ostraca." Compare Shaus et al. (2020: 11): the first stage writers were responsible for "data curation," "formal analysis," "investigation," "methodology," "software," "visualization" and "writing—original draft;" while E. Piasetzky and I. Finkelstein were responsible for "funding acquisitions," "resources," and "supervision." The presentation of everyone doing "review and editing" is an accepted fiction. Of course, all were

"Algorithmic Apparatus" and "Results" (pp. 3-4, until the sentence: "Our algorithmic observations can be further supplemented by the textual and archaeological context of the ostraca, deliberately avoided until this point"), and the section titled "materials and methods" (pp. 4-5). These writers invested more time than others in the study and reached conclusions about the minimal number of writers of the Arad ostraca.

In the second stage, "directors" from the higher Academic chain of command (or maybe some of them who deal with biblical studies) supplemented and revised the first-stage writers. This did not take long, but the "directors" turned the text into a much more ambitious work in order to "make noise" by tying it to the Bible. The hand of the "directors" is evident in the abstract, the box titled "significance," the general introduction (all on p. 1), and the "discussion" (pp. 3-4).

Later, Yana Gerber worked on the handwriting of the Arad ostraca, and her work was incorporated in other texts (Faigenbaum-Golovin et al. 2020; Shaus et al. 2020).[30]

11. *Conclusions*

Single authors can compose literary texts even under difficult conditions. Material requirements are few; spiritual requirements are more important: the will to write, based on respect for, or belief in, the written word. The general degree of literacy in a society is not a benchmark for the ability of individuals to compose literary texts. Of course, some literacy is required, but a literate elite of say five-ten percent is sufficient.

New studies of ancient ostraca are praiseworthy, but speculations that tie such studies to the Bible, in order to make "noise" are not.[31] Such misleading speculations should be avoided:

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asked to comment, but some did most of the editing and others did nothing, or added a few comments on their part.

30. "After a thorough examination of the ancient manuscripts Mrs. Gerber found that the 18 texts were written at least by 12 unique writers" (https://www.tau.ac.il/research/Literacy-in-the-biblic-times 13.9.2020; my translation). Compare "The examination was performed by two new algorithmic handwriting analysis methods and independently by a professional forensic document examiner" (Shaus et al. 2020: 1).

31. Eames and Garfinkel (2024: 184) seem to share the same grasp of literacy. They reach maximalist conclusions ("Iron Age II Jerusalem was a powerful administrative and literary center of a quality and scale evidentially unparalleled in the southern Levant", p. 179), based on quantities mainly of seal impressions, seals, *bullae*, and ostraca—in total 680 items. They believe that this proves something important about the writing of biblical texts. If we accept this logic, we must conclude that not Jerusalem, but Persian Idumea (where two thousand ostraca have been found) was the powerful, evidently unparalleled administrative and literary center of the southern Levant, and assume that the Bible was an Idumean creation.

- Shifting to "writing awareness" when the issue should remain literacy, i.e., knowledge of reading/writing;
- Bringing Arad ostracon 40 as proof of writing not by scribes, without telling the readers that almost nothing remains of the supposed "I have read" in this ostracon. There are several possible restorations and one of the group had read there "I have spoken."
- Claiming that only 20-30 soldiers lived at Arad by "broadly-accepted coefficients"—coefficients from villages, not fortresses.

Such speculations are based on simplistic arguments, including:

- Arguing that "to write" in a letter proves that the recipient wrote himself;
- Using negative evidence as if it conclusive;
- Inventing seemingly simple, but imaginary, "high" *vs.* "low" degrees of literary;
- Comparing the Arad and Samaria ostraca as if they are equal.

Such speculations are absurd:

- In assuming that persons were either literate or illiterate, so a quartermaster who wrote one ostracon could compose, in his spare time, a biblical book.
- In following a complex algorithm to claim a "high" degree of literacy at Arad, but ignoring a simple calculation that implies a *low* degree of literacy at Arad (if we accept their data, three writers out of 30 people = 10%; if we follow Herzog, three out of 50 people = only 6%).
- In claiming that the scarcity of Hebrew ostraca, seals, and *bullae* in Judah after 586 BCE proves an inability to compose biblical texts, but at the same time arguing for composition of biblical texts in Babylonia *without* Hebrew ostraca, seals and *bullae*.

The writers of the studies under review can compose mathematical algorithms, but as for archaeology and biblical studies, they cannot separate the wheat from the chaff. The Arad ostraca do not prove a "high" degree of literacy in Judah and say nothing about the composition of biblical texts. The Bible was not composed as a "by-product" by ostraca-writing quartermasters, but by trained scribes immersed in (religious/legal/historiosophical) literature.

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